

Appl. No. 09/868,289
Amdt. dated May 5, 2005
Reply to Office Action of April 20, 2005

Amendments to the Claims:

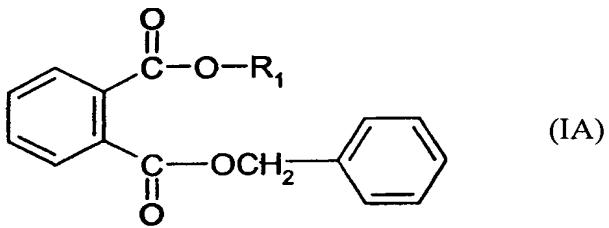
Listing of Claims:

1-19 (Canceled).

20. (Previously Presented) A poly urethane/urea-forming casting composition, which is capable of being cast and cured at temperatures between 15 and 35°C, comprising:

- (a) an isocyanate component or an isocyanate functional prepolymer having at least two isocyanate groups per molecule that contains or has been reacted with polytetramethylene glycol;
- (b) an aromatic amine curative; and
- (c) a phosphate ester or phthalate ester having a vapor pressure of less than 100 mPa at 25°C;

wherein said phthalate ester is a monomer according to formula IA

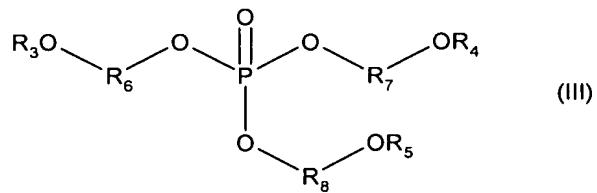


in which R₁ is unsubstituted or alkyl-substituted C₃-C₁₂ alkyl; and

wherein said phosphate ester is isodecyl diphenyl phosphate; or

wherein said phosphate ester is a monomer according to formula III

Appl. No. 09/868,289
Amdt. dated May 5, 2005
Reply to Office Action of April 20, 2005



in which R₃, R₄, and R₅, independently from one another, are unsubstituted or alkyl substituted C₁-C₅ alkyl, and R₆, R₇, and R₈, independently from one another, are unsubstituted or alkyl substituted C₁-C₅ alkylene.

21. (Previously Presented) A casting composition according to claim 20 wherein component (a) is a low free toluene diisocyanate prepolymer blend having a free toluene diisocyanate content below 0.4% by weight of said prepolymer blend.

22. (Previously Presented) A casting composition according to claim 20 wherein component (a) is a prepolymer blend that is a reaction mixture of an organic diisocyanate and polytetramethylene glycol.

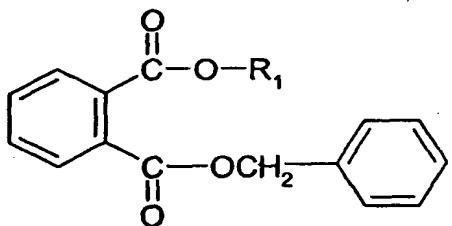
23. (Previously Presented) A casting composition according to claim 20 wherein the aromatic amine curative is selected from the group consisting of diethyl toluene diamine, tertiary butyl toluene diamine, dimethylthiotoluene diamine, and 1,2-bis(2-aminophenylthio)ethane.

Appl. No. 09/868,289
Amdt. dated May 5, 2005
Reply to Office Action of April 20, 2005

24. (Previously Presented) A casting composition according to claim 23 wherein the aromatic amine curative is dimethylthiotoluene diamine.

25. (Previously Presented) A casting composition according to claim 20 further comprising a polyether- and/or polyester polyol having a number average molecular weight of at least 250.

26. (Previously Presented) A casting composition according to claim 20 wherein component (c) is a phthalate ester according to formula IA



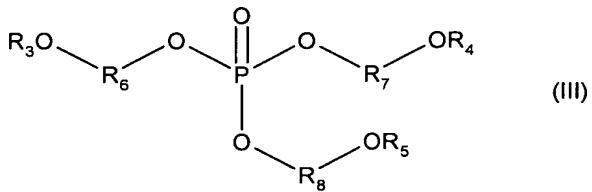
(IA)

in which R₁ is unsubstituted or alkyl-substituted C₃-C₁₂ alkyl.

27. (Canceled)

Appl. No. 09/868,289
Amdt. dated May 5, 2005
Reply to Office Action of April 20, 2005

28. (Previously Presented) A casting composition according to claim 20 wherein component (c) is a phosphate ester according to formula III



in which R₃, R₄, and R₅, independently from one another, are unsubstituted or alkyl substituted C₁-C₅ alkyl, and R₆, R₇, and R₈, independently from one another, are unsubstituted or alkyl substituted C₁-C₅ alkylene.

29. (Canceled)

30. (Previously Presented) A casting composition according to claim 20 wherein component (c) is butyl benzyl phthalate.

31. (Previously Presented) A casting composition according to claim 20 wherein component (c) is isodecyl diphenyl phosphate.

32. (Previously Presented) A casting composition according to claim 20 wherein component (c) is tributoxyethyl phosphate.

Appl. No. 09/868,289
Amdt. dated May 5, 2005
Reply to Office Action of April 20, 2005

33. (Currently Amended) A process for preparing a polyurethane casting, comprising the following steps:

contacting:

(a) an isocyanate component or an isocyanate functional prepolymer having at least two isocyanate groups per molecule that contains or has been reacted with polytetramethylene glycol, with

(b) an aromatic amine curative having at least two primary amine groups, and

(c) a plasticizing agent having a vapor pressure of less than 100 mPa at 25°C

and/or an evaporation rate of less than 40% after 24 hours at 87°C according to ASTM 1203-67;

pouring the combination of (a), (b) and (c) into a mold; and

curing[,];

wherein the foregoing steps are all carried out at ambient conditions.

34. (Previously Presented) The process of claim 33 wherein component (a) is a low free toluene diisocyanate prepolymer blend having a free toluene diisocyanate content below 0.4% by weight of said prepolymer blend.

35. (Previously Presented) The process of claim 33 wherein component (a) is a prepolymer blend that is a reaction mixture of an organic diisocyanate and polytetramethylene glycol.

Appl. No. 09/868,289
Amdt. dated May 5, 2005
Reply to Office Action of April 20, 2005

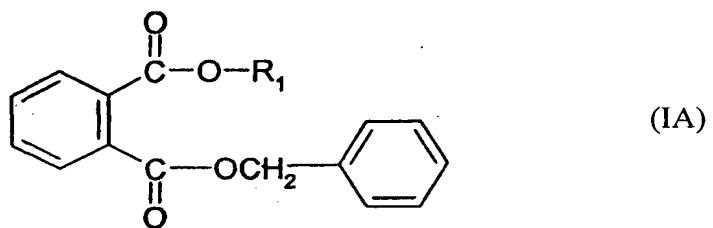
36. (Previously Presented) The process of claim 33 wherein the aromatic amine curative is selected from the group consisting of di ethyl toluene diamine, tertiary butyl toluene diamine, dimethylthiotoluene diamine, and 1,2-bis(2-aminophenylthio)ethane.

37. (Previously Presented) The process of claim 33 wherein the aromatic amine curative is dimethylthiotoluene diamine.

38. (Previously Presented) The process of claim 33 further comprising the step of adding to the combination of (a), (b) and (c) a polyether and/or polyester polyol having a number average molecular weight of at least 250.

39. (Previously Presented) The process of claim 33 wherein component (c) is a phosphate ester or phthalate ester having a vapor pressure of less than 100 mPa at 25°C.

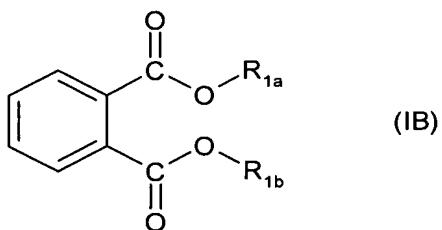
40. (Currently Amended) The process of claim 39 wherein component (c) is a phthalate ester represented by formula IA



Appl. No. 09/868,289
Amdt. dated May 5, 2005
Reply to Office Action of April 20, 2005

wherein [R_i] R_i is unsubstituted or alkyl-substituted C₃-C₁₂ alkyl.

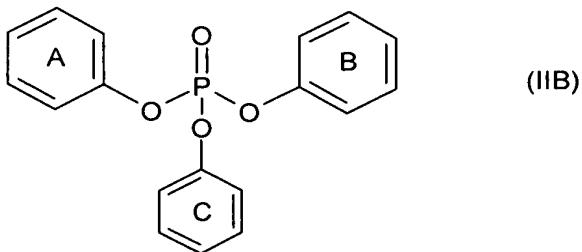
41. (Previously Presented) The process of claim 39 wherein component (c) is a phthalate ester represented by formula IB



wherein R_{1a} and R_{1b}, independently of one another are unsubstituted or alkyl-substituted C₅-C₁₂ alkyl.

42. (Canceled)

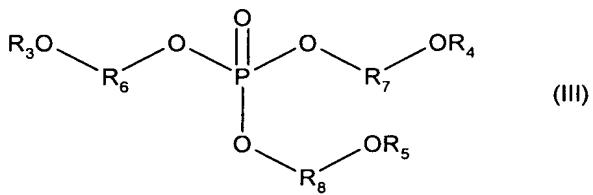
43. (Previously Presented) The process of claim 39 wherein component (c) is a phosphate ester represented by formula IIB



Appl. No. 09/868,289
Amdt. dated May 5, 2005
Reply to Office Action of April 20, 2005

wherein aromatic rings A, B and C, independently of one another, are unsubstituted, or substituted by one or more alkyl substitutions.

44. (Previously Presented) The process of claim 39 wherein component (c) is a phosphate ester represented by formula III



wherein R₃, R₄, and R₅, independently from one another, are unsubstituted or alkyl substituted C₁-C₅ alkyl, and R₆, R₇, and R₈, independently from one another, are unsubstituted or alkyl substituted C₁-C₅ alkylene.

45. (Previously Presented) The process of claim 39 wherein component (c) is ethylhexyl diphenyl phosphate.

46. (Previously Presented) The process of claim 39 wherein component (c) is butyl benzyl phthalate.

Appl. No. 09/868,289
Amdt. dated May 5, 2005
Reply to Office Action of April 20, 2005

47. (Previously Presented) The process of claim 39 wherein component (c) is isodecyl diphenyl phosphate.

48. (Previously Presented) The process of claim 39 wherein component (c) is tributoxyethyl phosphate.

49. (Previously Presented) A cast polyurethane article obtained by a process according to claim 33.

50. (Previously Presented) A process for preparing a polyurethane casting, comprising the following steps:

contacting:

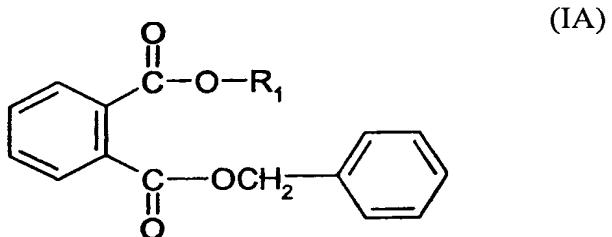
(a) an isocyanate component or an isocyanate functional prepolymer having at least two isocyanate groups per molecule that contains or has been reacted with polytetramethylene glycol, with

(b) an aromatic amine curative having at least two primary amine groups, and

(c) a phosphate ester or phthalate ester having a vapor pressure of less than 100 mPa at 25°C;

wherein said phthalate ester is a monomer according to formula IA

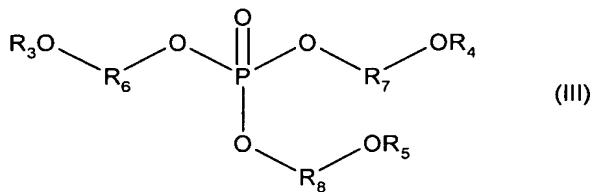
Appl. No. 09/868,289
Amdt. dated May 5, 2005
Reply to Office Action of April 20, 2005



in which R₁ is unsubstituted or alkyl-substituted C₃-C₁₂ alkyl; and

wherein said phosphate ester is isodecyl diphenyl phosphate; or

wherein said phosphate ester is a monomer according to formula III



in which R₃, R₄, and R₅, independently from one another, are unsubstituted or alkyl substituted C₁-C₅ alkyl, and R₆, R₇, and R₈, independently from one another, are unsubstituted or alkyl substituted C₁-C₅ alkylene;

pouring the combination of (a), (b) and (c) into a mold; and

curing;

wherein the foregoing steps are all carried out at ambient conditions.